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EXAMINER	
PHAM, TIMOTHY X	

ART UNIT	PAPER NUMBER
2617	

NOTIFICATION DATE	DELIVERY MODE
10/29/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/595,973	JOHANSSON ET AL.	
	Examiner	Art Unit	
	TIMOTHY PHAM	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *36-38,40-54 and 56-70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *36-38,40-54,56-70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/25/2010 have been fully considered but they are not persuasive.

On page 11, 1st paragraph, of the Applicant's Response, applicant argues that "The Examiner has not pointed to any teaching therein of spreading traffic over the available access networks, much less "determining a traffic control signal through adaptive traffic control calculations based on the coordinated access-related information," whereby a traffic control client of a multi-access terminal can spread traffic over the access networks "in response to the traffic control signal," as recited in claim 36", with the corresponding teaching indicating the arguments and the arts references below, the Examiner respectfully disagrees.
Steinberg (US 2004/0136324) discloses path optimization for routing of a communication session in a network having a plurality of core networks coupled to a plurality of access networks (Abstract). Steinberg, in particularly discloses distributed path and segmented network path optimization functionalities perform at a core network and an access network (paragraphs [0022]-[0023]). Furthermore, Steinberg discloses a core network and an access network perform the path optimization by determine a selected path for routing of the communication session based on quality of service, bandwidth, route complexity, costs (paragraphs [0011]-[0012]); Therefore, Steinberg does disclose "determining a traffic control signal through adaptive traffic control calculations based on the coordinated access-related information" as claimed. The Examiner understands that the coordinated access-related information is performed by iterative executions of an adaptive traffic control algorithm such as minimizing the difference between

output signals and predermined reference measures signal (Specification page 17 lines 5-10). During patent examination, the claims must be given their broadly reasonable interpretation. See MPEP 2111. The term "determining a traffic control signal through adaptive traffic control calculations based on the coordinated access-related information" is broadly claimed, therefore, it is broadly interpreted. Thus, the Examiner invites applicant to amend the claims to contain specific definition from specification of how "adaptive traffic control calculations based on the coordinated access-related information" to distinguish the intended invention with the cited prior arts.

Furthermore, on page 11 of the Applicant's Response, applicant argues that "The "traffic control client of the multi-access terminal" is but a portion of the element of claim 35 in which the spreading function of Applicants' invention is performed. The function of spreading the traffic is performed "in response to the traffic control signal," which is determined by a network-based traffic control server". The Examiner respectfully disagrees. Firstly, the Applicant argues that claim 35 supports the spreading function; however, the Examiner figured out that claim 35 does not exist. The Examiner does not known what claim in particular that the Applicant mentioned. Secondly, in the previous Office Action, the Examiner stated that Steinberg fails to specifically disclose spreading, at a traffic control client of the multi-access terminal, traffic over the access networks in response to the traffic control signal. However, Bodlaender (US 2005/0120140) discloses the remedy shortcoming of Steinberg. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

See *In re Fine,* 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones,* 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Steinberg discloses distributed path and segmented network path optimization functionalities perform at a core network and an access network (paragraphs [0022]-[0023]), but failed to specifically disclose spreading, at a traffic control client of the multi-access terminal, traffic over the access networks in response to the traffic control signal. Bodlaender discloses the remedy shortcoming of Steinberg ([0020], [0022]-[0023], e.g., The internal splitter/merger device 130 creates a special connection over all available access networks (110, 120) to the Internet merging/splitting component 200 (with IP address IP3)).

MPEP 2144 states that the strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. *In re Sernaker,* 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983). See also *Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick,* 464 F.3d 1356, 1368, 80 USPQ2d 1641, 1651 (Fed. Cir. 2006). As stated in the last Office Action, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to spread traffic over the access networks in response to the traffic control signal in order to optimize traffic distribution.

Claim Objections

2. Claim 41 is objected to because of the following informalities: the dependency of the claim is incorrect; note that claim 39 was cancelled and the claim 41 which currently depends

from claim 39. During examining process, the Examiner assumed that claim 41 depends on claim 36. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 36-38, 40-54, 56-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinberg (US 2004/0136324; Cited in PTO-892 Part of Paper No. 20090603) in view of Bodlaender (US 2005/0120140; Cited in PTO-892 Part of Paper No. 20100514).

Regarding claims 36, 53, 59, and 68, Steinberg discloses a method, a communication system, a network-based traffic control server, and a mobile multi-access terminal for traffic control in a communication system comprising a plurality of access networks and at least one mobile multi-access terminal, said method comprising the steps of:

receiving, at a network-based traffic control server of the communication system (Fig. 1, reference 130, e.g., core network innerconnect), access-related information from at least a subset of the access networks (paragraphs [0012], [0021], [0023], [0028], [0033], [0040], e.g., cost, including interconnect cost, involving various hops summed across the path, potential costs of other operators or service providers, and other cost factors (such as costs in providing varying amounts of bandwidth for different types of sessions); (3) resource loading and availability);

coordinating the access-related information at the traffic control server (paragraphs [0029], [0038], [0040], e.g., core network interconnect 130 is utilized in one of the selected paths, and providing for the access network 120 to control routing choices);

determining a traffic control signal through adaptive traffic control calculations based on the coordinated access-related information (Fig. 4, references 510, 520; paragraphs [0026], [0029], [0031], [0037], [0040]-[0041], [0047], [0061], [0064], e.g., will perform the path optimization function from its perspective as an access network 120, based upon its resources or resources under its control (i.e., its segments));

wherein said determining step is performed at the traffic control server and involves a traffic-spread decision by the traffic. control server, said method further comprising the step of forwarding the traffic spread decision to a traffic control client of a multi-access terminal (paragraphs [0022], [0029], [0038], [0040], [0045], e.g., providing an ordering or ranking of viable paths).

Steinberg fails to specifically disclose spreading, at a traffic control client of the multi-access terminal, traffic over the access networks in response to the traffic control signal.

However, Bodlaender discloses spreading, at a traffic control client of the multi-access terminal, traffic over the access networks in response to the traffic control signal (paragraphs [0020], [0022]-[0023], e.g., The internal splitter/merger device 130 creates a special connection over all available access networks (110, 120) to the Internet merging/splitting component 200 (with IP address IP3)).

Therefore, taking the teachings of Steinberg in combination of Bodlaender as a whole, it would have been obvious to one having ordinary skill in the art at the time of the invention by

applicant to spread traffic over the access networks in response to the traffic control signal in order to optimize traffic distribution.

Regarding claims 37, 54, and 60, Steinberg in combination with Bodlaender discloses the method, the system, and the server of claims 36, 53, and 59 respectively, wherein the adaptive traffic control calculations involves iteratively executing an adaptive traffic control algorithm for reaching a predetermined control objective (Steinberg: paragraphs [0053], [0055], [0057]-[0059], [0063], e.g., additional iterations of the method are needed for other potential paths of the target matrix).

Regarding claims 38 and 69, Steinberg in combination with Bodlaender discloses the method and the multi-access terminal of claims 36 and 68 respectively, wherein the spreading step involves distributing traffic over at least two access networks substantially simultaneously (Bodlaender: paragraphs [0020], [0022], e.g., splitting traffic 138 from an application 106 running on the client device 100 in the first location itself; transmitting the splitted data packets 140 originating from the client device 100 through a number of IP addresses IP1, IP2 across the internet).

Therefore, taking the teachings of Steinberg in combination of Bodlaender as a whole, it would have been obvious to one having ordinary skill in the art at the time of the invention by applicant to distribute traffic over at least two access networks substantially simultaneously for advantages of offering of high speed traffic (Bodlaender: paragraph [0011]).

Regarding claim 61, Steinberg in combination with Bodlaender discloses the server of claim 59 wherein the means for determining comprises traffic-spread deciding means, and the

server device further comprises means for forwarding the traffic spread decision to the traffic control client (Steinberg: paragraphs [0022], [0029], [0038], [0040], [0045], e.g., providing an ordering or ranking of viable paths).

Regarding claims 40 and 55, Steinberg in combination with Bodlaender discloses the method and the system of claims 36 and 53 respectively above, wherein the determining step is performed at the traffic control server, said method further comprising the steps of:

transmitting a traffic distribution recommendation comprising the traffic control signal from the traffic control server to the traffic control client (Steinberg: paragraphs [0022], [0029], [0038], [0040], [0045]); and,

deciding, at the traffic control client, how to spread traffic over the access networks based on the traffic distribution recommendation (Steinberg: paragraphs [0022], [0029], [0038], [0040], [0045], e.g., based upon its resources or resources under its control (i.e., its segments), will perform an access network path optimization function from its perspective).

Regarding claim 41, Steinberg in combination with Bodlaender discloses the method of claim 39 above, further comprising the step of receiving, at the traffic control server, terminal-specific access information from the multi-access terminal, the terminal-specific access information being used in the determining and/or deciding step at the traffic control server (Steinberg: paragraphs [0022], [0029], [0038], [0040], [0045]).

Regarding claim 42, Steinberg in combination with Bodlaender discloses the method of claim 36 above, further comprising the step of forwarding the coordinated access-related information from the traffic control server to the traffic control client, and wherein the

determining step is performed at the traffic control client server (Steinberg: paragraphs [0022], [0028]-[0029], [0033], [0038], [0040], [0045]).

Regarding claim 43, Steinberg in combination with Bodlaender discloses the method of claim 36 above, wherein the traffic spreading step is further based on terminal requirements and/or access network requirements (Steinberg: paragraphs [0013], [0021], [0033], [0044], [0054], [0056], e.g., insufficient bandwidth was available through core network for the requirements of the particular communication session, necessitating routing through the access network).

Regarding claim 44, Steinberg in combination with Bodlaender discloses the method of claim 36 above, wherein, for a communication system with a plurality of multi-access terminals, for at least a subset of the multi-access terminals, traffic controlling actions are performed at different network positions for different multi-access terminals requirements (Steinberg: paragraphs [0031], [0037], [0040], [0044]).

Regarding claim 45, Steinberg in combination with Bodlaender discloses the method of claim 36 above, wherein the adaptive traffic control calculations involve minimizing the difference between a desired value and a current value of an access-related parameter (Steinberg: paragraphs [0039], [0050], [0055], [0057]-[0057], e.g., different weighting to the routing variables).

Regarding claim 46, Steinberg in combination with Bodlaender discloses the method of claim 45 above, wherein the desired value of the access-related parameter is determined at the respective access network and included in the access-related information transmitted to the

traffic control server from the respective access network (Steinberg: paragraphs [0039], [0050], [0055], [0057]-[0057]).

Regarding claim 47, Steinberg in combination with Bodlaender discloses the method of claim 45 above, comprising the step of determining the desired value of the access-related parameter at the network-based traffic control server (Steinberg: paragraphs [0031], [0034], [0039]).

Regarding claim 48, Steinberg in combination with Bodlaender discloses the method of claim 36 above, wherein the traffic spreading step at the traffic control client is session-based (Steinberg: paragraphs [0052], [0060], [0065]).

Regarding claim 49, Steinberg in combination with Bodlaender discloses the method of claim 48, wherein said traffic spreading step comprises the steps of:

receiving a session request at the multi-access terminal (Steinberg: paragraphs [0023], [0028], [0047]);

selecting an access network for the session of the session request at the traffic control client in the multi-access terminal (Bodlaender: paragraphs [0019]-[0020], e.g., creating a special connection 2, 3 over a number of available access networks AN1, AN2 to a merging/splitting component 200 on the internet); and

associating the session with the selected access network at the traffic control client, whereby packets of the session are directed to the selected access network (Steinberg: paragraphs [0033], [0055], [0058], e.g., associated costs of the route).

Therefore, taking the teachings of Steinberg in combination of Bodlaender as a whole, it would have been obvious to one having ordinary skill in the art at the time of the invention by applicant to select an access network for the session of the session request at the traffic control client in the multi-access terminal in order to optimize traffic distribution.

Regarding claims 50 and 70, Steinberg in combination with Bodlaender discloses the method and the multi-access terminal of claims 36 and 68 respectively, further comprising the steps of:

assigning a respective mobility IP address for each access network of the multi- access terminal (Bodlaender: paragraphs [0018], [0023], e.g., The client device 100 has IP address IP1 on access network AN1, and IP address IP2 on access network AN2); and,

associating, at the multi-access terminal, the respective mobility IP addresses with respective virtual access network interfaces (Bodlaender: paragraphs [0018], [0020], [0023], [0051]).

Therefore, taking the teachings of Steinberg in combination of Bodlaender as a whole, it would have been obvious to one having ordinary skill in the art at the time of the invention by applicant to assign a respective mobility IP address for each access network of the multi- access terminal and associate the respective mobility IP addresses with respective virtual access network interfaces in order to optimize traffic distribution.

Regarding claim 51, Steinberg in combination with Bodlaender discloses the method of claim 37, wherein the adaptive traffic control algorithm is selected from the group consisting of a proportional and integral (PI) control algorithm, a proportional, integral and derivative (PID)

control algorithm, a proportional (P) control algorithm, a minimum-variance control algorithm and an RST control algorithm (Steinberg: paragraphs [0034], e.g., using integral or differential operations on the variables).

Regarding claims 52 and 57, Steinberg in combination with Bodlaender discloses the method and the system of claims 36 and 53 respectively above, wherein the traffic control server is associated with an overall access server with means for access handling, mobility and security (Steinberg: paragraphs [0033], [0043], e.g., user preferences may also be a variable, particularly with regard to types of services, security, cost).

Regarding claim 56, Steinberg in combination with Bodlaender discloses the system of claim 53 above, having a plurality of multi-access terminals (Steinberg: Fig. 1, reference 175), wherein, for at least a subset of the multi-access terminals, different multi-access terminals comprise traffic control means associated with different degrees of self-control (Steinberg: paragraph [0038], e.g., The corresponding network element may then perform its RPF calculations for each path segment within its target matrix, and may also provide an ordering or ranking of viable paths (e.g., by degree of optimality or goodness)).

Regarding claim 58, Steinberg in combination with Bodlaender discloses the system of claim 53 above, wherein the access networks of the communication system include at least one access network using a technology selected from the group consisting of GPRS, WLAN, Ethernet, Bluetooth, WiFi, xDSL, CDMA, WCDMA and cable modem (Steinberg: paragraphs [0002], [0023], [0026], [0047], e.g., CDMA or GSM).

Regarding claim 62, Steinberg in combination with Bodlaender discloses the server device of claim 59 above, wherein the traffic distribution information comprises a traffic distribution recommendation based on which traffic can be spread over the access networks (Steinberg: paragraphs [0022], [0029], [0038], [0040]-[0041], [0045], e.g., The arbitration procedure may be implemented non-distributively, residing in either the core network 110 or the access network 120, and not both, or as a negotiation, distributed among two or more network elements. Using the selected path from the arbitration or negotiation process, the communication session may then be routed accordingly).

Regarding claim 63, Steinberg in combination with Bodlaender discloses the server device of claim 59 above, further comprising means for receiving terminal-specific access information from the multi-access terminal (Steinberg: paragraphs [0022], [0029], [0038], [0040], [0045]).

Regarding claim 64, Steinberg in combination with Bodlaender discloses the server device of claim 59 above, wherein the coordinating step involves aggregating or processing the access-related information (Steinberg: paragraphs [0031], [0034], [0039]).

Regarding claim 65, Steinberg in combination with Bodlaender discloses the server device of claim 59 above, wherein the adaptive traffic control calculations involve minimizing the difference between a desired value and a current value of an access-related parameter (Steinberg: paragraphs [0039], [0050], [0055], [0057]-[0057], e.g., different weighting to the routing variables).

Regarding claim 66, Steinberg in combination with Bodlaender discloses the server device of claim 60 above, wherein the adaptive traffic control algorithm is selected from the group of a proportional and integral (PI) control algorithm, a proportional, integral and derivative (PID) control algorithm, a proportional (P) control algorithm, a minimum-variance control algorithm and an RST control algorithm (Steinberg: paragraphs [0034], e.g., using integral or differential operations on the variables).

Regarding claim 67, Steinberg in combination with Bodlaender discloses the server device of claim 59 above, being associated with an overall access server with means for access handling, mobility and security (Steinberg: paragraphs [0033], [0043], e.g., user preferences may also be a variable, particularly with regard to types of services, security, cost).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY PHAM whose telephone number is (571)270-7115. The examiner can normally be reached on Monday-Friday; 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent P. Harper can be reached on 571-272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Timothy Pham/
Examiner, Art Unit 2617

/George Eng/
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